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CaSQ 4A - Scatterplots: Making Predictions for Height vs. Arm Span

You can download this activity as a rich text file (RTF) using the link at the bottom of the page.

How to: Get a Random Sample from CensusAtSchool

Go to the CensusAtSchool Random Sampler to download a sample.

Reference year: *(select year)* **Sample size:** *At least 20 students*

Select questions: *Height, Arm span*

Location: *Select location* **Year level:** *(select a range of year levels)*

To protect privacy there is a rule built into the sampler that the requested sample size cannot exceed 10% of the respondents for the parameters entered.

Please note: This task is designed to be completed by hand. It can also be done using a computer or CAS calculator.

Task:

1. In your CensusAtSchool random sample, find the question about height, and the question about arm span, and enter both sets of twenty numbers as:

- as a table in your workbook or
- two columns in Excel, or
- two separate lists in your CAS calculator

2. Create a scatter plot, with height as the independent variable (*x*) and arm span as the dependent variable (*y*).

3. Create a line of best fit. Position your ruler on the graph to follow the general trend of the data, then move the ruler and rule a line so that approximately ten (half) data points are above the line, and approximately ten (half) data points are below the line.

4. Complete the following table by taking readings from your graph using the line of best fit. You may need to extrapolate (extend your line) to get some answers.

Height (*x*)		160 cm	180 cm		250 cm
Arm Span (*y*)	150 cm			190 cm	

5. Explain why the numbers you have provided in the table in question 4 are only predictions.

6. Give reasons for what may affect the accuracy of your line of best fit.

Extension:

7. In question 4 you used the line of best fit to make predictions of arm span and height. Use two sets of ordered pairs to find out the linear equation of the line of best fit, in the form of $y = mx+c$.

Download the full activity: RTF

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